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Keith Hartley, *The Political Economy of Aerospace Industries: A Key Driver of Growth and International Competitiveness?*. Edward Elgar Pub., 2015, 288 pp. \$130 Hardcover.

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Book Review

Defence expenditures command a significant portion of discretionary funds in most nations. Since there are competing demands for scarce government funds, explaining or justifying defence spending is a daunting task especially in peacetime. Defence ministries know the pervasiveness of economics in decision making and the need to be better equipped and more sophisticated in their abilities to assess and present defence activities in an economic context.

Defence activities are often presented within the context of macroeconomic and sectoral impacts and the sustainment of an industrial base both for economic development and strategic (national security and supply guarantee) reasons. The aerospace industry is one such sector that receives particular attention from politicians and lobbyists for its purported claims for generating high paying, high skill jobs and innovation.

This authoritative book on the aerospace industry by one of the leading academic economists on the subject, cogently and critically assesses these claims using established economic theories and methods. This important work is relevant to academics and researchers in government, industry and think tanks. The book begins with an excellent introduction to scope and define the aerospace industry. Those familiar with national accounts and government statistics will note and appreciate the accessible language used to describe the input-out structure of the aerospace industry and the associated inter-relationship with the supply chain (indirect and induced impacts).

The next chapter provides a historical and statistical overview of the aerospace sector. Specifically, it provides valuable context on industry consolidations after the World Wars particularly between the US and the rest of the world. In addition, the chapter highlights the importance of competitive air races in spurring innovation and how imports and collaborations within sectors and nations became the norm to combat rising unit costs. There are page-number binding errors in this chapter as pages jump from 10 to 14 and back. Hopefully future re-prints will correct this oversight.

From Chapter 3 onwards economic models and theories are briefly introduced followed by case studies and assessment of past empirical work. In Chapter 3 the notion of market failure is introduced specifically by discussing how governments

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influence both the defence and civilian aerospace industries through the determination/control of demand (defence budgets and what to buy), entry (allowing foreign firms to bid on defence contracts), and property rights (landing rights, etc).

Chapter 4 provides a nice summary of life cycle costs, associated taxonomies and learning economies. This chapter provides important concepts and generalizations that applied researchers can use when developing initial acquisition costs for major air platforms. While not necessarily a benefit measure, Chapter 5 discusses qualitative measures such as speed range, load weapons and number of passengers as a measure of technical progress. This chapter would have benefited from a brief discussion on hedonic pricing and its use to assess quality adjustments.

Chapters 6 and 7 discuss the structure, conduct and performance (SCP) of the aerospace industry with a case study on BAE Systems (a multinational defence and aerospace firm) to illustrate the SCP approach in Chapter 8. For the graduate student interested in defence economics and the aerospace industry in particular, these chapters provide seamless links to microeconomic concepts and policy. Major microeconomic theories and concepts covered in these chapters include agency and contract theory, transaction cost economics, and game theory. In terms of measures of performance, Chapter 7 provides an interesting comparative analysis between European and US aerospace firms in terms of export sales. While it is reasonable to accept that exports provide strong evidence of comparative advantage and thus competitiveness, their applicability to defence products may be limited due to regulations particularly in the US such as the International Traffic in Arms Regulations (ITAR). ITAR not only controls the export and import of defense-related articles and services on the United States Munitions List but also restricts employees that are not part of the signatory nation.

Chapter 9 is devoted to public choice theory and its characterization of and predictions about the various agents in the political market including industry lobbyists, bureaucracies (defence ministries) and political parties. One potential outcome of this political market interaction is the potential support of an industrial sector through subsidies. This aspect, and whether there is an economic case for it, is discussed in Chapter 10. The policy issues around military procurement, the government's role as the sole or major buyer and the consequences, are discussed in some detail in Chapter 11. While this chapter does not provide theoretical prediction and empirical validation on the subject, it does provide a framework on how to structure and evaluate government procurement processes.

The next two chapters introduce the political economy of international collaborations and the reality of such arrangements by comparing the collaborative European fighter aircraft project (Typhoon) with two national programs in France and Sweden. Chapter 14 (the final chapter) provides some speculations, based on trends, on the future demand from the military threats, continuing technological advances in performance and manufacturing, aerospace firms' entry and exit and likely market structures.

Throughout the book, the author carefully sets out how to structure the relevant research questions, what measures/criteria to use for quantification and assessment of the industry, and why some of the economic theories and models succeed or fail to address the research questions. While the author has provided ample evidence to question some of the claims of the aerospace industry, he has also articulated the need for data and a concerted effort by international and national statistical organizations to collect and standardize data on military and government activities. The author also notes difficulties in conducting empirical assessments due to the counterfactual: for example, what would have happened in the absence of subsidy or other support to the aerospace firm? This is indeed an area for future research

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and I suggest recent work by Abadie and Gardeazabal (2003) as one innovative solution to the counterfactual. The Abadie and Gardeazabal study tested the effects of terrorism in the Basque Country by creating a "synthetic" control region from other Spanish regions using relevant economic characteristics of the Basque Country before the outset of Basque political terrorism in the late 1960's.

As the author outlined in the preface, this book is a "labour of love" covering Ph.D. work and continuing high-level scholarship in industrial organization and defence economics over decades. The critical assessment of the aerospace industry is not only important but also timely, as nations continue to engage in industrial policies on the hopes of increasing competitiveness and standard of living. The book provides the necessary tools and assessment criteria that can be used to assess whatever industrial sector that attracts the attention of government officials and politicians alike.

References

Abadie, A & Gardeazabal, J. (2003) The economic costs of conflict: A case study of the Basque Country, *The American Economic Review*, 93(1), 113-132.



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